

Health Activities Related to Air

Presentation to the
US EPA Science Forum 2004: Health Communities and Ecosystems
June 3, 2004
Washington, D.C.

Nancy K. Kim, Ph.D.
NYS Department of Health

Activities

- Outreach and Education
- Respond to health concerns
- Research
- Environmental Public Health Tracking

Air Quality Advisory Outreach

- Joint DEC/DOH press release
- DOH notifies
 - State, regional and local health department contacts
 - NYS Department of Education
 - Interested individuals

Research

- Study of air contaminants and acute asthma attacks in urban areas
- Breathe Easy Project
- Childhood asthma hospitalization and ambient air sulfur dioxide in the Bronx, NY

Ambient Air Contaminants Measured Daily*

Particulates

PM₁₀

PM_{2.5}

Particulate Number

Metals

Acid Aerosols

Elemental and Organic Carbon

Pollen and Spores

Gases

Ozone

Sulfur Dioxide

Nitrogen Oxides

Aldehydes

*Hourly In Some Cases

Responding to Health Concerns

- Unscheduled air releases
- Odors, visible emissions
- Request for health studies



Bucket Brigade



Method uses 5-gallon buckets, pumps and Tedlar bags.

Comparing Results ($\mu\text{g}/\text{m}^3$)

	<i>Bucket Brigade</i>	<i>Annual Averages</i>
methylene chloride	6.6 to 22	3.0 to 23
toluene	9.5 to 33	4.9
ethylbenzene	6.2	0.5
m,p-xylenes	17	2.0

Response to Health Concerns from Residents Living Near Stone Quarry

- Community concern about exposures from quarry and cancer, asthma, lupus and other autoimmune disease.
- NYS DOH conducted two incidence studies for two ZIP Codes including area of concern.
 - Cancer incidence.
 - Hospital admissions for asthma and other respiratory diseases.
- The community dissatisfied with studies.

Environmental Public Health Tracking

- Part A (Research) Project
 - Link ambient air pollution data to reproductive outcomes, asthma development, and childhood death in the focused study areas
 - Investigate the association between health outcomes and air pollution in New York State
- Part B (Surveillance) Project
 - Track the space-time patterns in asthma and air pollution in New York State

Data Visualization and Analysis for Surveillance

- Use Maps, Graphs, etc., and Spatial Statistics to Identify Patterns and Trends in Time and Space
 - Asthma Rates Separately
 - Air Pollutant Levels Separately
 - Asthma and Air Pollutants Jointly
- Test for Association Between Air Pollution and Asthma Hospitalizations Using Regression and Other Statistical Methods